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STATED MEETING, JANUARY 18, 1842.

VICE PRESIDENT MORTON in the Chair.

DONATIONS TO LIBRARY.

History of the Island of St. Helena, to the year 1823. By T. H. Brooke, Esq. 8vo. London, 1824. From George D. Blaikie, Esq.

American Journal of Science and the Arts, No. 42, for January, 1842. From the Editors.

Proceedings of the American Philosophical Society, for November and December, 1842. From the Society.

Vertebra of Icthyosaurus and parts of the paddle bones of the same reptile, from the Lias of Lyme Regis, England: also Vertebra of the Plesiosaurus, and a Pentacrinites, from the same strata. Presented by Dr. S. G. Morton.

WRITTEN COMMUNICATIONS.—Mr. Haldeman read a paper on three new species of Unionidæ, from the waters of the United States, viz. Unio abacus, U. purniceus, and Anodon plicatus. Referred to a committee.

Mr. Conrad read some additions to his paper on the Silurian and Devonian Fossils read at the last meeting; which was referred to a committee.

Mr. Conrad also read a memoir, " On the Identity of the Middle Cretaceous Formation of the United States, with the Faxoe limestone of Europe."

Mr. Conrad stated as the result of mature observation and reflection, that the medial division of the American cretaceous strata, as seen on Timber creek, in New Jersey, are of the same age with the white chalk of Europe, as maintained by Dr. Morton. He announced the discovery at that locality, of a Planularia, a multilocular shell characteristic of the European chalk. Mr. Conrad has also detected in the medial cretaceous beds at Wilmington, North Carolina, the Cirrus perspectivus, a Nautilus which he believes to be the N. Danicus, and the Cypræa bullaria; the last two being characteristic of the Faxoe limestone.

Mr. Conrad's paper being designed for publication, was referred to a committee.

Verbal Communications.—Professor Johnson stated the results of some experiments on the magnetism of bars of wrought iron broken by tensile force.

He referred to a former communication, in which he had given an account of trials on cast iron in a state of fusion, and to the influence of terrestrial magnetism, inducing the magnetic state in bars of iron, according to the position in which they are placed with reference to the magnetic axis. He had found that when a bar of soft iron is drawn asunder at ordinary temperatures, and in the direction of the magnetic meridian, there was always manifested at the point of fracture a decided evidence of magnetic polarity; and that the kind of magnetism was that belonging to the region towards which the broken extremity of each fragment pointed. This magnetic condition was indicated by the adhesion of any particle of iron or of hammer cinder, which chanced to be near the fracture at the moment, as well as by the action of a small needle when held near the point.

If the two extremities separated from each other by a short distance, be at the moment of fracture in contact with a mass of iron filings, the latter will adhere to the two ends, and extending across, form a continuous line or bridge, which appears to serve as a keeper, for they continue for a considerable time with little diminution of their force.

When the fracture is made at a red heat, little or no magnetic effect appears to result from the action of breaking. But when the temperature of the bar is between five and six hundred degrees of Farenheit, the magnetism is not only marked at the time, but is in a great degree permanent. Samples were stated to have been examined, which had been broken for several years, and to be still in the same magnetic state in which they were at the moment of fracture.

In order to prove what part of the effect in the foregoing instances, was due to the earth's magnetic influence, the proving machine which produced the fracture, was changed in position, so as to place the bar, in proving, directly across the magnetic meridian, instead of coinciding with it as before. In this case no polarity was observed, whether the bars were broken cold or hot, except some slight indications in a direction across the breadth of the bar at the point of fracture.

MEETING OF BUSINESS,

JANUARY, 25TH, 1842.

VICE PRESIDENT MORTON in the Chair.

Reports of Committees.—The Committee to whom was referred Mr. S. S. Haldeman's paper on two new species of the genus of Perca, reported in favour of publication in the Journal.

The committee on Mr. Conrad's memoir on New Species of Silurian and Devonian fossils, with geological observations,—and a second memoir on the Contemporaneousness of the Middle Cretaceous strata of the United States with the Faxoe limestone of Europe, reported in favour of publication in the Journal.

The Corresponding Secretary's report was also read and adopted.